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Seychelles, a vulnerable or resilient SIDS? A local perspective.

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ABSTRACT: This article analyses perceptions of residents of the Seychelles in the western Indian Ocean in relation to a long-running debate over small island developing states (SIDS) as to whether they are vulnerable or resilient. The results of data obtained from 25 key informant interviews and 70 household surveys conducted in 2013 showed that respondents perceived their country to be both vulnerable and resilient. Moreover, the data revealed that the relationship between vulnerability and resilience was complex, and that five interpretations of that relationship were evident: conflict, compromise, complementarity, symbiosis and transformation. Also, the conceptual distance between the two terms – vulnerability and resilience – was shown to be closer than may be commonly assumed. Finally, the paper questions whether the debate over vulnerability versus resilience is rightly confined to SIDS or could be equally applied to other states.

Keywords: fisheries management, island, resilience, Seychelles, SIDS, vulnerability

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Introduction

There has long been an assumption that small island developing states (SIDS) are particularly vulnerable to a wide range of threats, including natural disasters, military coups, economic crises, land degradation, marine pollution, food insecurity, power supply failures, and endemic corruption. This assumption has been compounded by the claim that SIDS do not generally possess the resources to deal adequately with such threats, and are therefore forced to rely on aid from larger states to rescue them. However, more recently there has been a realization that at least some SIDS have the capacity (resilience) to counter these threats by developing sectors such as tourism, offshore financial services, and fish processing. In this article, we investigate

the case of Seychelles, an Indian Ocean SIDS, to determine whether its residents perceive it primarily as a vulnerable state or as a resilient state. This is an important issue because public perceptions can have a powerful effect on legislative policy, and a general perception of vulnerability could encourage the government to follow a strategy of seeking outside aid (a dependence strategy), whereas a general perception of resilience could encourage the government to follow a strategy of seeking innovative ways to generate domestic economic growth (a self-reliant strategy). For this study, a programme of fieldwork was carried out in Seychelles during 2013 to investigate the opinions of key informants (KIs) and household members on the country's vulnerability and resilience. The result was that respondents reported both vulnerability and resilience, suggesting that the two concepts are not mutually exclusive, but complementary and even symbiotic. In fact, five distinct kinds of relationship between vulnerability and resilience were detected, and the conceptual gap between them was seen to be narrower than may be expected. After a brief description of the Seychelles, three further sections follow: on the conceptual framework and methodology that inform the study; the results of the fieldwork; and a discussion of the implications of the findings for our understanding of the complex relationship between vulnerability and resilience.

The Republic of Seychelles is a small island developing state (SIDS) in the western Indian Ocean, comprising a total land area of 445km² spread over 115 granitic and coral islands with a population of approximately 90,000. Seychelles' economy is highly dependent on its marine-related sectors: tourism and fishing. Tourist activities account for 21 per cent of total employment, and 25 per cent of gross domestic product (GDP); tuna processing accounts for 16 per cent of total employment and 15 per cent of GDP while artisanal inshore fishing accounts for 4 per cent of the total workforce (Clifton, Etienne, Barnes, et al., 2012). Since gaining independence from Britain in 1976, Seychelles has developed from a subsistence economy to the country with the highest standard of living in Africa, largely through the expansion of its tourist industry. However, as Connell (2013) has pointed out, during the last 10 years, the country has suffered a fall in overseas aid, a reduction in preferential terms of access to European Union (EU) markets, and stiffer competition in both tourism and fisheries. Moreover, high welfare spending, coupled with an increasing balance of payments deficit because of rising levels of imports and soaring inflation (up to 38 per cent in 2008), led to a default on its foreign debt in 2008 which stood at US\$663 million. The government was forced to ask the International Monetary Fund (IMF) for a bail-out, which entailed a structural adjustment programme involving the devaluation of the Seychelles rupee by 45 per cent, severe cuts in public expenditure, the agencification or privatization of public services to parastatal companies, and the liberalization of foreign trade, including the removal of restrictions on foreign investment in land and other property. The result was currency stabilization and a reduction of public debt from 140 per cent of GDP in 2008 to 15 per cent in 2012, though at the expense of increased construction of foreign-owned villas and hotels, and consequent rise in pollution, coastal erosion, and coral reef sedimentation, even within marine protected areas (MPAs) (Clifton et al., 2012).

Conceptual framework and methodology

During the last 30 years, SIDS have attracted two contrasting characterizations: vulnerability and resilience. On vulnerability, Easter (1999) claimed that most of the world's vulnerable countries were SIDS (also McGillivray, Naudé, & Santos-Paulino, 2010; Von Tigerstrom, 2005; CS, 2009; Payne, 2004; Croes, 2006; Pelling & Uitto, 2001; UNWTO, 2012). SIDS

have commonly been depicted (e.g., GS, 2013) as vulnerable because of their small size; limited usable land area; small populations; remote locations; fragile terrestrial and marine ecosystems; greater exposure to climate change (Prasad, Hypher & Gerecke, 2013) and natural disasters (Méheux, Dominey-Howes & Lloyd, 2007); limited economic resources; expensive food prices; high energy and communication costs; over-dependence on foreign aid and imports; economic, trade and currency fluctuations; scarce local skills; high emigration rates of skilled professionals; restricted local capital; weak civil society; ineffective non-governmental organizations (NGOs); rare trade unions; government-controlled media; biased judiciary, expensive public administration; political nepotism and cronyism; and military interventions (Connell, 2013; UNWTO, 2012). Indeed, SIDS have often been depicted as powerless, dependent, and sometimes failed, states (McGillivray et al., 2010), and these judgements were quantified on a Vulnerability Index (Baldacchino, 2000; Briguglio, 1995). In this “strident ‘deficit’ discourse” (Baldacchino, 2012, p. 238), SIDS were seen as states with special needs, requiring external help to survive. Baldacchino & Bertram (2009, p. 141) dubbed this interpretation “structural determinism which asserts that from small size flows weakness, and from weakness flows an inability to manage effectively the challenges one faces”. SIDS’ vulnerability signified a status “beyond development” (Baldacchino, 2011, p. 555). In this characterization, the fate of SIDS was in the hands of others (Easter, 1999).

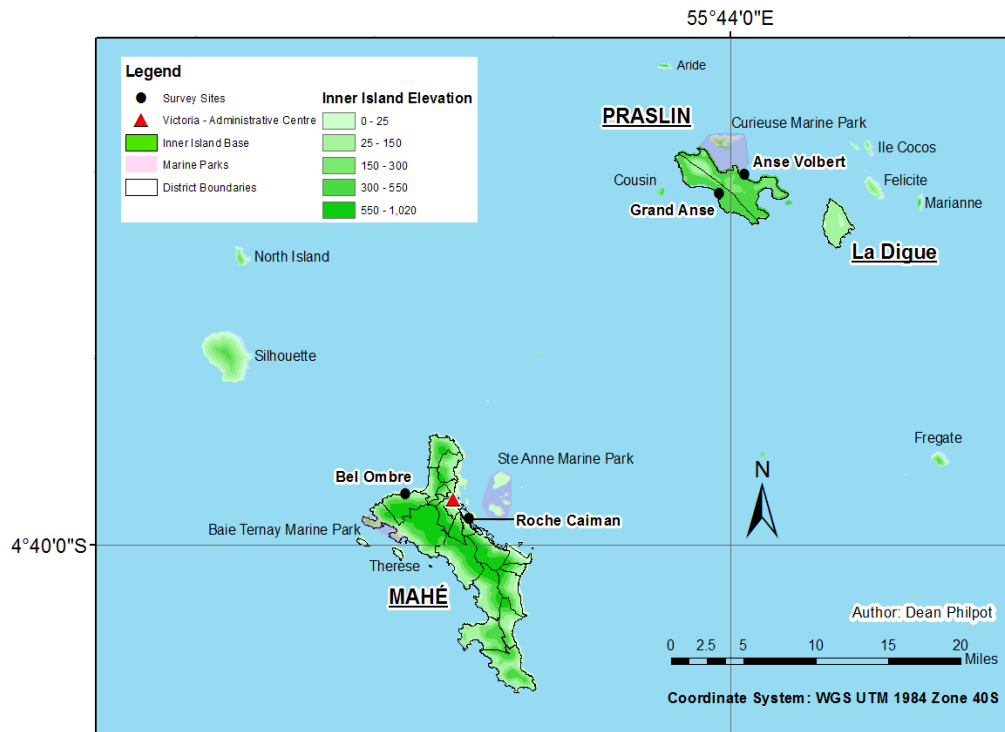
However, a contrasting characterization to the discourse of vulnerability of SIDS has more recently emerged. This discourse of resilience focuses on the resourcefulness of SIDS to cope with the above challenges (Armstrong & Read, 2006). Guillaumont (2010) stated that only 15 per cent of SIDS were low-income economies. In agreement with other scholars (Bertram, 2006; Easterly & Kraay, 2000; Croes, 2006), Baldacchino & Bertram (2009, p. 142) argue that,

The survival into the modern era of a large number of successful small states ... is evidence ... not of weakness but of underlying elements of strength that are inherent in small, often island, societies.

Here, the emphasis is on agency, not structure, where SIDS’ fate was in their own hands to face down their vulnerability by an innovative use of their own resources (Easter, 1999), though they also received some benefits from an accommodating global environment (Payne, 2004). Armstrong & Read (2000, pp. 288, 289) asserted that “‘islandness’ has virtually no impact on the economic performance of microstates ... and the early pessimistic tone of much of the research literature has now receded”. SIDS might lack power, but they could still be strong.

This article applies the above conceptual framework to Seychelles to determine whether the country’s marine governance is best understood by respondents as vulnerable or resilient.

Figure 1: Key demographics of the inner islands including the administrative capital of Victoria (Δ) and survey sites (●), for Mahé and Praslin.



Map created in ESRI ArcMap 10.1 by the authors.

The primary data for this paper was obtained during fieldwork in Seychelles carried out during April-June 2013, when a community-based household survey was conducted and key informants (KIs) were interviewed. Secondary data was obtained from archival documentation in Seychelles and a review of the peer-reviewed and gray literature. The administrative districts of Bel Ombre and Roche Caiman on Mahé, and Anse Volbert and Grand' Anse on Praslin, within the inner island group (see [Figure 1](#)), were selected as household survey sites based on their proximity to each other, high environmental vulnerability (McClanahan, Cinner, Graham, et al., 2009), and representative gradient of wealth and management status (Stead, Daw, Graham, et al., 2006). Two sets of surveys were conducted face-to-face during an eight-week period from 14 April to 7 June 2013, and a total of 70 household responses were obtained. Surveys were conducted randomly from April 22 for one week per site and supplemented during public holidays such as Labour Day. Interviews with fishers were treated as household samples and were arranged through convenience sampling upon return from fishing trips and during public holidays. The respondents targeted were household heads aged between 17 and 75 years, and one sample was defined as the total information gathered from residents present at a single property. Survey questions were formulated under sections of 'environment', 'management', and 'communication', in addition to demographic information. A variety of dichotomous (yes/no), open-ended and Likert scale ranking questions were used, supplemented by maps. Approximately 60 questions were answered by 43 respondents in Bel

Ombre; 20 respondents in Roche Caiman; five in Grand' Anse; and two in Anse Volbert. All respondents' contributions remained anonymous, identified only by district or organization and number. Dissemination of the survey's results was provided by maintaining a Facebook group allowing others to track the research progress, and through a presentation given to organization-level representatives. With regard to the key informant interviews, 25 were conducted with respondents who were selected after discussion with *in situ* coordinators to represent organizations considered to be stakeholders in marine resources management, including environmental NGOs, government ministries, parastatals, fishers' organizations, and action groups. Semi-structured questions were asked during the interviews, all replies to which were recorded using a dictaphone. Household data was pooled into MS Excel©® and used to supplement the analysis of the KI interviews. Digital recordings of KI interviews were manually transcribed verbatim and analysed thematically. Secondary data was analysed according to the themes which emerged from the interviews.

Results of the fieldwork

The principal aim of the fieldwork was to investigate whether Seychelles is seen by respondents (both KIs and household heads) as a vulnerable or as a resilient SIDS. The results showed that in four spheres of island life – ecology, economy, society, and governance – respondents perceived that Seychelles was both vulnerable and resilient.

Ecology

Expressions of both vulnerability and resilience were found in respondents' views on four aspects of Seychelles' marine ecology: external threats to its marine ecosystem; internal threats to that system; governmental attempts to mitigate those threats; and islander's awareness of their environmental responsibilities in dealing with the threats. On external threats, according to Martin (2010), Seychelles possessed some of the most threatened ecosystems in the world, and many respondents perceived that the country's marine resources were at serious risk from these threats. For example, Interviewees 3 (government officer) and 5 (environmental NGO - ENGO), believed that Seychelles suffered severely from the coral bleaching event in 1997/8, which '*continues to be a major impact*'¹ (a view shared by Cesar, van Beukering, Payet, & Grandcourt, 2004; Payet, 2007; Spencer, Teliki, Bradshaw, & Spalding, 2000; McClanahan et al., 2009). However, some respondents claimed that marine ecology in Seychelles was recovering its health after the coral bleaching event in 1998 (a view held by Grandcourt & Cesar, 2003; Spalding & Jarvis, 2002; Payet, 2007; Russell, Skewes, & Englehardt, 2006). Interviewee 5 (ENGO) said that '*some areas are improving massively year-on-year*', while Interviewee 1 (environmentalist) said that the coral reefs in Aldabra were '*almost back to 100%*'.

On internal threats, several respondents blamed marine pollution and over-fishing: Interviewee 14 (ENGO) attributed marine pollution to discharges from large vessels, while according to Householder 34, there was '*too much fishing everywhere*'. Interviewee 4 (fisher organization) claimed that serious environmental damage was caused by over-fishing: '*It's still just hammer everything that moves, so the megafauna is really declining and that will*

¹ Respondents' comments are italicized.

continue'. Interviewee 9 (ENGO) blamed the big foreign trawlers (often unlicensed according to Interviewee 22 and Payet et al., 2011), which *'sometimes take 2,500 tonnes of fish in one boat'* – not *"the small fishermen because their catch is very little"* – pointing out with the former that *'It's not selective fishing: you just take everything out of the water...even sharks and turtles ... and anything you don't need you just throw it back in the sea but it's already dead'*. In answer to the Household Survey Question 12A – 'Do you think there are more fish in the sea now?' – 57 out of 70 householders replied that there were fewer fish.

On the other hand, respondents claimed that the marine environment was healthy, and fish stocks were still abundant (Interviewee 22 (government officer); Interviewee 13 (ENGO). In answer to Household Survey Question 9: 'In general, what do you think about the nature in the Seychelles?' a typical response was that of Householder 15 who said it was a *'lovely place to live, great places to go'*. In answer to Household Survey Question 11: 'Has the sea changed in any way in the past 5 years?' Householder 54 said the *'sea has always been the same, looks the same from when I was a kid'*, (though that was a respondent from one of many non-swimming families).

On governmental attempts to mitigate threats to marine ecology, Interviewee 14 (ENGO) claimed that much of the damage to the marine environment was caused by developers whose actions were encouraged by government,

in the last ... three years ... government has wilfully overridden the environmental legislation that it has put in place to safeguard the environment of the Seychelles by allowing and in fact...encouraging foreign investment to come in and develop areas that are otherwise untouched and unspoilt. Doing so in the name of national progress, but national progress is now coming at a loss of environmental integrity.

Interviewee 4 (fisher organization) said there was poor assessment of fish stocks, and Interviewee 7 (government officer) claimed *'there is no monitoring, no surveillance'*. Interviewee 14 (ENGO) explained that *'It's very difficult to quantify the amount of take that is happening ... so it makes management of a lot of these fisheries very, very difficult'*. However, Interviewee 22 (government officer) argued that the government was committed to *'sustainable development: they don't want to develop too fast too quickly'* and that it was serious about marine conservation: *'for example in Seychelles we have almost 51% terrestrial nature reserves'*. Indeed, Interviewee 7 (government officer) said that *'we are probably one of the leaders in the Western Indian Ocean when it comes to marine conservation'*. According to Interviewee 5 (ENGO), the government carried out extensive checking of stock levels, and Interviewee 9 (ENGO) said that *'Seychelles is quite advanced in marine monitoring'*.

On one mitigation strategy – that of MPAs – opinions were particularly divided. On one side, Interviewees 4 (fisher organization) and 7 (government officer) pointed to the failure of MPAs. First, there were too few of them: only about 0.03% of the country's marine area was protected; second, they were not enforced; third, they were unequally enforced: *'marine parks that have got rules and regulations for some people and not for others'*; and fourth, they were not located in the right areas: many were positioned near tourism areas in order to charge for entry, not because of the biodiversity value of their sites (UNDP, 2007; Lalanne, Payet, & Renaud, 2000). On the other side, Interviewee 10 (ENGO) claimed that some MPAs were changing from paper parks to real reserves (a claim made also by Domingue, Payet, & Shah, 2000). In answer to the Household Survey Question 17B, 'How do you feel about marine

parks?', most householders approved of them: 15 householders said they were good; 9 said they were good for fish (though 5 said they were not good for fish); 7 said they were good for tourists; 4 said they were good for educating children; and 10 said there should be more of them.

Similar divisions of opinions occurred on other ecological policies. For example, on the ecosystem approach: Interviewee 4 criticised the government for failing to introduce it, whereas Interviewee 23 (government officer) claimed the government was moving towards it. More basically, some respondents bemoaned the absence of effective environmental regulations – lack of a marine spatial plan was noted by Interviewee 8 (government officer) – whereas Interviewee 11 (government officer) held that the marine environment '*is not a free-for-all*', and Interviewee 23 (government officer) said there were lots of restrictions on fisheries. In answer to Household Survey Question 16Bii: 'Can you think of any examples [of marine regulations]?' householders mentioned many restrictions, including bans (permanent or temporary) on whaling, catching or by-catching turtles, dolphins, lobsters or other shellfish, trawling, dynamiting, fish trapping, using big nets, drift nets, small mesh nets or spear guns, fishing in protected areas, fishing near mangroves, discharging pollution; dispensing garbage, anchoring in coral areas, jet-skiing, and swimming.

Finally, on islanders' awareness of their environmental responsibilities, there was a dichotomy between the view that there was a lack of environmental awareness among the Seychelles people: according to Interviewee 17 (ENGO), people held '*the opinion that the marine environment as a resource is endless... "it's our marine environment and we can take what you want"*', and the view that Seychellois people felt a sense of collective responsibility for fisheries: Interviewee 25 (coastguard). In answer to Household Survey Question 16A: 'Who do you think is responsible for looking after the sea?' almost half the respondents said everybody was responsible: Householder 2 replied '*we all are, right?*' Householder 13 said '*everyone – the government, the people, fishermen, kids*', and Householder 52 said '*everybody on earth*' (a view reported by UNDP, 2007). Support for environmental laws was linked to interviewees' claims that environmental education was taking place in Seychelles' schools: Interviewee 2 (MPA manager), Interviewee 1 (UN environmentalist), Interviewee 5 (ENGO). One consequence was support for environmental whistle-blowing; calling the 'Green Line' phone service: Interviewee 20 (government officer); Interviewee 25 (coastguard).

Economy

Perceptions of vulnerability were found in respondents' views on three aspects of the Seychelles economy – piracy, dependence on imports, and tourism – and perceptions of resilience were found on the latter two aspects, though not on the first. On piracy, several respondents mentioned that exposure to piracy still threatened fishers' livelihoods (a view shared by Martin, 2010; SFA, 2011; Kothari & Wilkinson, 2013). Interviewee 24 (ENGO) said that there were some areas where fishers were too afraid to go, and several householders said that they would not take a fishing job because of their fear of Somali pirates. No one played down this threat, though since 2013 Somali piracy has declined. On import dependence (a common threat to SIDS), Interviewee 8 (government officer) alluded to Seychelles' lack of national economic self-sufficiency and dependence on imports. Balance of payments deficits led directly to the country's financial crash in 2008, which reduced many people to poverty. According to Interviewee 4 (fisher organization), '*In 2008, we all became 70% poorer*

overnight ... there is certainly a proportion of society that has been dropped off the bottom'. The IMF restructuring reform package imposed a heavy toll on the Seychellois, replacing socialist welfare dependence with neo-liberal individualism, and as Interviewee 7 (government officer) explained, 'People just did not have the chance, the transition period, to get used to the idea ... the poverty level increased in Seychelles'. Price inflation occurred, as Interviewee 12 (fisher organization) noted,

Prices are going up and the households are finding themselves very, very tightly squeezed to make ends meet ... there was a survey only a couple of months ago that about 28% of the Seychellois families are living under the poverty threshold.

In answer to the Household Survey Question 6: 'Has the price of food increased during the last 5 years?' Householder 2 replied 'every year, drastically', while Householder 27 said it is 'more than we can cope; life is hard now'.

This perception of economic vulnerability in import dependency was matched by three expressions of economic resilience. First, tourism is an invisible export and therefore a potential solution to balance of payments deficits. Second, confidence was expressed in the private sector in general. Interviewee 25 (coastguard) drew attention to new economic opportunities in the private sector with many foreign companies coming to Seychelles. Interviewee 12 (fisher organization) asserted that there were several new uses for Seychelles' natural resources, and Interviewee 8 (government officer) explained that the government was looking at oil exploration and renewable marine energy projects. This general air of economic optimism is also reflected in the literature (ADB, 2011; Campling, Confiante, & Purvis, 2011; WB, 2011; IMF, 2013). Third, Interviewee 7 (government officer) described the practice of economic survival by bartering,

When we get down to the real basics and ... look at food security at the household level and look at vulnerable families and where they get food from - we see a lot of it in bartering, in very much an island style life ... how these low-income households survive.

According to Householder 28, however, one kind of economic enterprise in making use of natural resources – ceding fishing rights to EU vessels – backfired and exacerbated Seychelles' ecological vulnerability: 'everyone knows government has sold our seas to foreigners'. Interviewee 7 (government officer) claimed that,

*For every \$100 worth of fish that is going to Europe, we are probably getting \$2 on it ... here we are, busy feeding all the Thais and the Spanish vessels and the ... French ... but at whose expense?...Which other people of the world that you know would give away all their natural resources so generously?.*²

² In its latest Fisheries Partnership agreement with the EU, Seychelles agreed to allow 40 tuna purse seiners and 6 surface longliners to fish in its EEZ during 2014-2020 in return for a total sum of €30.7 million (Megapescas January 2014).

On tourism, some respondents saw it as a source of economic vulnerability because of exogenous factors (Payet, 2007; Shareef & McAleer, 2006), including periodic economic crises in Europe. Interviewee 12 (fisher organization) complained that, *'Everything is tourism, tourism, tourism - they are giving away government property for tourism development ... all their decisions seem to be short-term'*. Interviewee 17 (ENGO) said that there were already too many hotels on the islands, and it was counterproductive to build more because it undermined the very thing that tourists came to Seychelles for: a pristine environment,

More tourists are gonna come here because it is green and Seychelles tries to sell itself as the country that has the most areas of protected land and water, so it is completely hypocritical that they are building a resort in a marine protected area ... that's bonkers.

However, respondents also saw tourism as a form of economic resilience in that it generated employment. Interviewee 12 (fisher organization) claimed there were plenty of jobs, especially in the tourist industry. Although its fortunes fluctuated, Interviewee 22 (government officer) said that, *'In terms of economic sustainability ... tourism has always remained, even from 2008 until now ... the key economic pillar'*. And since tourism needed rich biodiversity, Interviewee 22 said that *'a lot of ... the Seychelles Sustainable Tourism Label is about ecological and natural marine protection'*. In other words, the economic resilience provided by tourism secured the resilience of the marine ecosystem (a view espoused by Payet, 2007).

Society

Perceptions of both social vulnerability and social resilience were expressed by respondents on two issues: tourism and materialism. On tourism, respondents reported resentment at being denied access to beaches because seaside luxury hotels and holiday villas required privacy. Foreign workers were accused by Interviewee 16 (ENGO coordinating officer) of gleaning the coral of *'anything that moves'*. Interviewee 7 (government officer) claimed that foreign developers were eroding Creole identity,

When you have 90,000 people and 200,000 tourists ... at some point I feel the Seychellois /the Creoles will disappear - we will no longer have Creoles ... I've been around ... twenty-nine years almost, and I've seen the impact of Creole people, the power, the force just diminish, diminish, diminish.

On the other hand, respondents acknowledged that tourism provided a large number of jobs, thereby curbing the social unrest caused by widespread unemployment.

On materialism, respondents regretted that a pervading mentality of materialism was damaging the islands' traditional culture. Interviewee 7 (government officer) said that *'Priority number one is to get us richer ... whether it's offshore banking or ... any which way ... at the expense of anybody and anything'*. Interviewee 13 (ENGO) said that *'it seems like, the more money you have, the more ... you want'*. Interviewee 17 (ENGO) complained that, in the Ministry of Environment, *'money makes the decision'* – environmental impact assessments (EIAs) have been waived to allow developments through. Interviewee 3 (regulator) said that *'money talks'*. One side effect of materialism was growing inequality and consequent ill health

caused by poor diet leading to obesity, diabetes and hypertension (GS, 2013), which Interviewee 7 (government officer) termed a '*nutrition security*' problem.

However, respondents claimed that social cohesion remained high. For example, Interviewee 25 (coastguard) asserted that there were good communications between the Seychellois, '*It's a very small community and we all know each other ... Because we tend to be very familiar with each other ... we can talk ... and get things done ... it's very informal but it works*'. In answer to the Household Survey Question 25 – 'Generally, do you feel like communication has improved in the past five years?' 51 out of 70 householders replied yes; 8 replied a little; and 9 replied no. Of those who replied yes, most attributed the improvement in communication to the internet and mobile phones. This positive picture of social resilience in Seychelles chimed in with its Human Development Index, which was the highest in Africa and 57th in the world, and with its status as one of the safest places in the world (Vision 21, 2001; GS, 2012).

Governance

Respondents perceived serious vulnerabilities yet also major strengths in Seychelles' system of governance. Perceived vulnerabilities focused on state authoritarianism, while perceived strengths focused on stakeholder participation. Respondents complained that the top-down structure of political decision-making left little room for stakeholder involvement (Interviewee 10 (ENGO)) (a view shared by UNDP, 2007). In answer to the Household Survey Question 23A – 'If there is a decision to be made about the sea in your district, are you involved in the decision?' – 57 householders said no; 3 said sometimes; and 5 said yes. Of those who said no, Householder 49 said '*never - you are never listened to*', and Householder 51 said '*no, like lighting a match in the rain*'. In answer to the Household Survey Question 24A – 'In general, do you feel like your views are heard?' 46 householders replied no; 7 replied sometimes; and 4 replied yes. Of those who replied no, Householder 39 said '*no, but people should listen to families like us*', while Householder 47 said '*no - your vote doesn't count*'. Interviewee 12 (fishers organization) explained that an attempt at co-management between the Praslin Fishers Association (PFA) and the parastatal Seychelles Fishing Authority (SFA) was thwarted by the government (PFA, 2013). State authoritarianism was reinforced by political cronyism, according to Interviewee 12 (fisher organization),

The problem in Seychelles - it's not what you know but who you know. There's still that mentality of 'are you with us or against us' - if you are with us then you get in straight away.

Interviewee 16 (ENGO coordinating officer) claimed that jobs were given to political affiliates rather than to the most able candidates. Interviewee 13 (ENGO) claimed that the legal system was not impartial: '*People don't have ... confidence in law enforcement ... they don't believe the law is going to be followed through because somebody's got certain political connections*'.

In contrast, respondents referred to elements of democratic governance which they saw in the Seychelles' political system (Interviewee 8 (government officer)). Interviewee 4 (fisher organization) asserted that '*Across the country, there is a general transition to ever more openness, discussion, true democracy, true exchange...and less corruption ... That doesn't mean there isn't a long way to go but the progress is evident*'. This view is exemplified by

Seychelles being ranked second out of 48 sub-Saharan African countries on good governance practice (ADB, 2011). Interviewee 20 (government officer) praised Seychelles' system of stakeholder engagement: *'I think the Seychelles does very well in terms of its local governance because we involve all stakeholders at almost all levels of development. Their views are taken on board'*. Interviewee 20 (government officer) claimed it was government policy to,

... decentralize government as much as possible ... to ... call on the community to take ownership of their environment ... people are getting ... encouragement ... to group to form CBOs and NGOs ... communities are ... opening up more to those issues ... very vocal now, especially ... [via] social media - Facebook-ing.

Interviewee 23 (government officer) saw this bottom-up process increasingly at work in fisheries governance; a view also expressed by Lucas & Govinden (2010),

Over the past 10 years, we tend to ... consult the stakeholders and see what their needs are ... their problems ... and discuss with them what are the possible solutions ... the SFA is going with the new management getting the fishermen more involved, getting the NGOs and the other stakeholders involved in the decisions we make. So definitely there has been an improvement.

Some respondents saw this stakeholder involvement as signifying a shift towards community management: Interviewee 23 (government officer). Interviewee 18 (government officer) said that there was already community consultation on development projects,

If there was to be a new development in this area ... they organize meetings for the community members and they invite everyone who wants to come, to inform them on any development in that area, so the community has a chance to tell its views/its concerns on any development.

Interviewee 13 (ENGO) sketched out this community-based strategy,

What we're doing in general is to help communities form CBOs like a community-based organization ... What we want to do is to help communities that are ready to organize themselves and form their own association like a community group...it has to be their thing and not our thing pushing ... whatever that comes up from them we'll help them make this action plan and help them also try to get the funding to do the things that they want to do at a grassroots level ... a lot of the grants for NGOs now ask you to ... help empower ... the community.

In answer to the Household Survey Question 24Bii – 'Could you suggest a method to improve your involvement in management decisions?' – many householders suggested more support for community meetings.

Another example of good governance perceived by respondents was the downsizing of the state sector by devolving some governmental powers to parastatal agencies. However, Interviewee 16 (ENGO coordinating officer) criticised these parastatals for lack of coordination: *'I have never seen anything so incompetent ... they wrap themselves up in so*

much bureaucracy they ... [are like] ships in the dark'. This was a recognition that non-authoritarian systems are not necessarily more efficient. Interviewee 4 (fisher organization) complained that law enforcement by parastatals was weak,

Enforcement ... is poor to exceedingly poor. And even when people are caught red-handed then effective prosecution is negligible.

This problem evidently lay deeper than structural reform; it was embedded in the cultural proclivities of an island people. As Interviewee 10 (ENGO) explained,

It's being a small community ... everyone knowing everyone else if you're going to arrest someone of your close family, it's not going to happen.

Some respondents blamed the government for society's ills (Interviewee 23 (government officer) and complained about lack of "*political will*"; Interviewee 10 (ENGO) accused government of being reactive rather than pro-active; and Interviewee 14 (ENGO) claimed that,

Getting a governmental body to agree to change is one thing, getting them to actually do it, follow it through and implement it is a whole different ball game.

They also blamed management hypocrisy: because fishers '*see organizations, big hotel developments and so on, breaking these rules [environmental laws], they don't see why they should obey them either*' (Interviewee 14 ENGO). In answer to the Household Survey Question 16B: 'Do you know of any rules or regulations that affect how people use the sea?' Householder 33 answered, '*rules? - there are no rules - everyone takes what they need at the moment*'. But Interviewee 14 (ENGO) blamed fishers, not the government, for the failure of community-based fishery management projects,

It all comes back to fishermen being very independent people ... getting them to all agree on one thing, and then to get them to actually do it is significantly harder than it sounds.

Discussion

These results lead us to reflect that the concepts of vulnerability and resilience are far from simple and uniform but highly complex and ambiguous. Drawing on Gallie's idea of essentially-contested concepts (Gallie, 1956), we can distinguish between the *concepts* of vulnerability/resilience and the *conceptions* (or conceptualizations or instantiations) of those two concepts. Just as there is a single concept of freedom but many different conceptions of that concept (absence of impediments; availability of choices; effective power; status; self-determination; doing what one wants; and self-mastery) (Gray, 1990), so there is one concept of vulnerability (weakness) and one concept of resilience (strength) but many different conceptions of the concepts of vulnerability and resilience (ecological; economic; social; and governmental). We argue that, while there may be conflict between the *concepts* of vulnerability and resilience, there is scope for reconciliation between some of the *conceptions* of vulnerability and resilience.

Applying this analysis to the case of Seychelles, we can see five different interpretations of the relationship between vulnerability and resilience; conflict between the two *concepts*; and compromise, complementarity, symbiosis, and transformation between *conceptions* of the two concepts. Conflict signifies that the concepts of vulnerability and resilience are mutually exclusive and permanently locked into a zero-sum relationship whereby the more vulnerability there is, the less resilience; and the more resilience there is, the less vulnerability. We can see perpetual conflict manifested in Seychelles respondents' perceptions of the condition of the marine ecosystem, exemplified by a constant battle to fight threats of pollution and overfishing to maintain the health of the seas. Another example of conflict is the tension between economic materialism and social cohesion: respondents expressed dismay that the government's rush to growth was eroding the traditional egalitarian and moral values of Seychellois culture. In the case of law enforcement, the battle seemed to be being won by vulnerability in that there were two threats – governmental weakness/lack of political will and citizen's non-compliance – and little resilience strategy.

Compromise means that a SIDS strikes a balance in dealing with vulnerability. One form of compromise lies in the perception of some respondents that the Seychelles government's commitment to sustainable development led it to avoid developing the economy too fast. Other forms of perceived compromise include a partial rather than a comprehensive marine monitoring service; a selectively restrictive MPA system rather than a blanket prohibition on any use; and a moderate set of rules regulating fishing activity rather than a free-for-all. We can also see compromise in respondents' acceptance that the price of accepting mass tourism as an economic lifeline is some dilution of Seychelles traditional creole identity. Compromise may also mean making an accommodation with threats, dealing with some of them but leaving others unchallenged. In the perception of Seychelles respondents, for example, the threat of national insolvency in 2008 was firmly dealt with, but the threat of maritime piracy was treated largely with resignation.

Complementarity means that vulnerability co-exists with resilience: residents of SIDS learn to live with risk as a permanent fact of life, and adopt a risk management strategy that will enable it to survive in a dangerous world. Conceptions of vulnerability and resilience are therefore in a condition of co-existence: they exist in parallel. We can see this strategy in Seychelles respondents' views on tourism, which simultaneously posed a threat to marine ecology and an incentive to keep the coastal waters clean. Similarly, respondent's perceptions of import dependency (vulnerability) were complemented by their perceptions of invisible earnings from tourism and innovative use of natural resources, including lucrative fishing deals with the EU (resilience). Moreover, respondents' perceptions of authoritarianism and cronyism as fault-lines in the Seychelles political system were complemented by their perceptions of transparency, stakeholder involvement, and community-based organizations.

Symbiosis means that there is dynamic interaction and mutual dependence between conceptions of vulnerability and resilience. Far from being in conflict, they need each other: a conception of vulnerability implies a conception of resilience, and a conception of resilience presupposes a conception of vulnerability: they are two sides of the same coin; there cannot be one without the other. Indeed, there is a synergistic relationship between them: the resilience is developed in order to deal with the vulnerability: the very experience of vulnerability kick-starts resilience into action in SIDS (Connell, 2013). Vulnerability is a necessary (if not a sufficient) precondition of resilience. We can see this symbiotic relationship in respondents' juxtaposition of poverty and bartering in Seychelles: increasing levels of poverty following the

2008 financial crash led to innovative ways of dealing with it, among them being a system of bartering. Similarly, respondents perceived that although increasing materialism widened economic inequality, it also improved communication between citizens through social media. Conversely, resilience, while dealing with one kind of vulnerability, may increase the risk of another kind of vulnerability: an illustration of the law of unintended consequences. For example, according to respondents, the deal with the EU to allow its member states' trawlers access to Seychelles' EEZ led to over-fishing. Likewise, tourism was Seychelles' escape route from dependence on aid, but at the same time it made the country vulnerable to international economic fluctuations. Also, while the setting up of parastatals signified downsizing of the state, they were perceived to bring with them poor levels of coordination and law enforcement. So policy makers have to see resilience as both a solution to, and a potential cause of, vulnerability.

Transformation means that a SIDS decisively shakes off the threat of vulnerability, transforming it into a secure ecological, economic, social and political state; in other words, graduating from a developing country to a developed country. Briguglio (CS, 2009, p. 50) alluded to such transformation when referring to SIDS, such as Singapore, for whom it is a disadvantage to be small but which nevertheless manage to "withstand or bounce back from this disadvantage by resilience building". We can see this transformative process in Seychelles respondents' claim that the marine ecosystem had greatly recovered from the coral bleaching event in 1997-8. McClanahan et al. (2009) endorsed this stance when stating that, although Seychelles was very vulnerable to climate change (high environmental susceptibility), it also had a considerable capacity to adapt to that change (high social adaptive capacity). Also, respondents implied that there was a cognitive shift happening in the minds of Seychelles people from a lack of environmental awareness to an acknowledgement of environmental responsibilities.

Summary

These different interpretations of the relationship between vulnerability and resilience lead us to reassess the meanings and implications of the notions 'vulnerability' and 'resilience'. Vulnerability varies in severity from relatively minor inconveniences (such as a small reduction in foreign tourist numbers) to major catastrophic events (existential threats such as global warming, causing rising sea levels to a low lying island). Most vulnerabilities lie between these two extremes and, if they are not rebuffed, threaten to change the way of life of the SIDS at risk, so a vulnerable SIDS is in danger of changing from one pattern of existence to another. Using the language of ecology, the 'danger' here is one of moving from one type of ecosystem to another. Turning to the notion of resilience, it implies that a resilient SIDS has the capacity to adapt to events or pressures that threaten to change it (Bown, Gray, & Stead, 2013). But, even when successful, such adaptation is unlikely to restore the SIDS (or ecosystem) to the condition it was in before the appearance of the threat. In other words, resilience enables a SIDS to reach a new equilibrium rather than to maintain the old equilibrium, which is like succumbing to vulnerability, since in both cases, the old equilibrium is replaced by a new one. So, whether a SIDS succumbs to vulnerability or adapts to vulnerability, the outcome is formally identical: a shift from one form of equilibrium to another form of equilibrium. This is an elaborate way of discerning that the distance between

vulnerability and resilience in practice may not be as substantial as some commentators have suggested.

Moreover, the above analysis of five interpretations of the relationship between vulnerability and resilience seems equally applicable to larger and continental (non-island) states. The restriction of the vulnerability/resilience conceptual framework to SIDS seems unnecessary, because there appears to be nothing preventing us from applying it to large-scale developed countries. All states have vulnerabilities, and all states have methods of coping (resilience strategies) with their vulnerabilities. Arguably, all states will manifest a variety of relationships between vulnerability and resilience not unlike the above five relationships identified for the Seychelles. The vulnerability/resilience conceptual framework is a useful tool to apply to any state, not simply a SIDS, to better understand its evolutionary development.

Conclusion

This paper has argued that respondents in the Seychelles have shown that, in relation to marine governance in their country, the traditional depiction of SIDS as vulnerable has to be matched by the more recent depiction of SIDS as resilient. According to our respondents, there was both vulnerability and resilience in the way in which the country's resources were managed: vulnerability is thus not inconsistent with resilience. However, the paper also shows that the relation between vulnerability and resilience is more complicated than it may appear at first sight. First, there are five distinct interpretations of that relationship: conflict, compromise, complementarity, symbiosis, and transformation. Next, the very terms 'vulnerability' and 'resilience' are conceptually linked in that they both imply a shift from one state of equilibrium to another. Finally, we see no reason why the vulnerability/resilience framework should only be applied to SIDS: all states have vulnerabilities and resilience strategies for dealing with them, and it is possible that respondents in larger and continental states would interpret the relationship between vulnerability and resilience in ways not unlike the interpretations identified in the Seychelles.

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